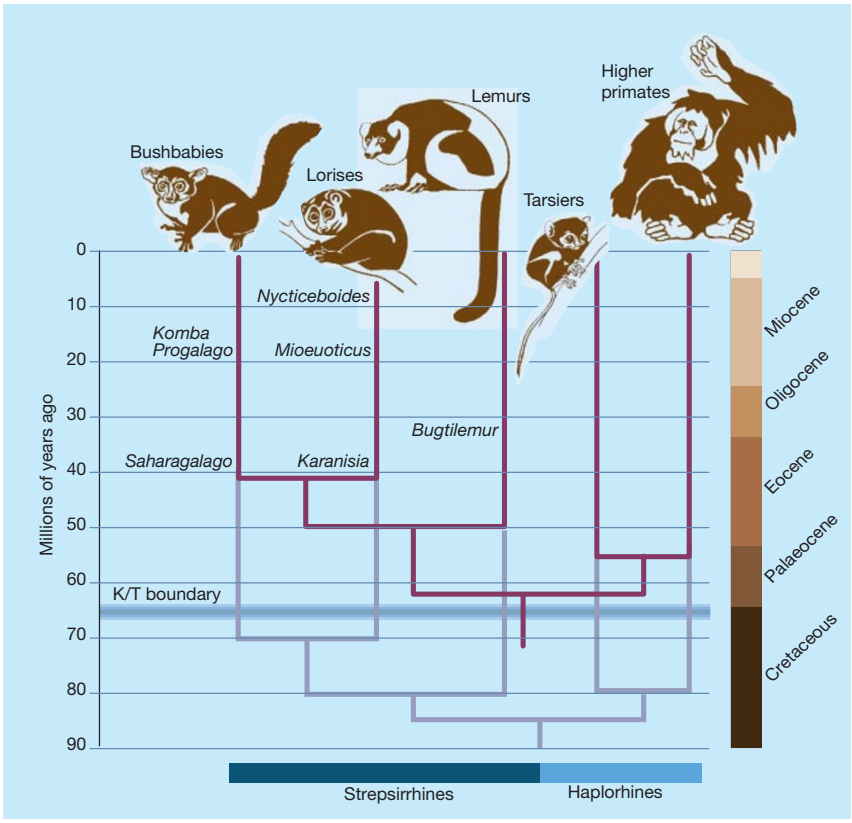

Figure 1 **A simplified primate evolutionary tree. The two main groups of living primates, the strepsirrhines and haplorhines, are shown, and the new fossil forms (*Saharagalago* and *Karanisia*) described by Seiffert and colleagues[1] are included. These specimens double the known age of the lineages leading to bushbabies and lorises (together, the lorisiforms), and increase the number of known lorisiform genera by half. The previously known genera are *Komba*, *Progalago* and *Mioeuoticus* from the early Miocene of East Africa, and *Nycticeboides* from the late Miocene of Pakistan. The only known fossil form potentially related to the other strepsirrhine group, the lemurs, is *Bugtilemur* from the early Oligocene of Pakistan. A direct reading of the fossil record indicates that primates began to diversify just after the Cretaceous/Tertiary (K/T) boundary. But, given the incompleteness of the fossil record, diversification may have occurred at least 20 million years before the K/T boundary, as indicated by the shadow tree. (Primate icons drawn by Lucrezia Beerli-Bieler.)**

chromosomal and molecular evidence supports the view that the strepsirrhines and haplorhines diverged early in primate evolution[4]. Morphologically, strepsirrhines are clearly distinguished by their retention of various primitive features, such as the rhinarium (a naked area of moist skin surrounding the nostrils), and by a uniquely derived toothcomb. This structure is used both for feeding (for instance, scooping pulp from fruit and scraping gum from trees) and for grooming the fur, and is formed by the canines and incisors in the lower jaw (six teeth in all). These teeth are elongated and bilaterally flattened into tines, and their narrow crowns angle sharply forwards from the roots, almost horizontally. Hairs dragged between these tooth crowns during grooming leave conspicuous grooves, clearly recognizable on fossilized teeth[5]. A convincing indication that *Karanisia* is, indeed, a strepsirrhine is that a lower-jaw fragment shows typically compressed tooth sockets for the narrow roots of the canine and incisors, and the crown of an isolated canine shows tiny lateral grooves worn by the passage of hair. This neatly confirms the prediction that the toothcomb was present in early strepsirrhines, and also provides direct fossil evidence of the occurrence of grooming behaviour 40 million years ago.

Soon after the initial split between the toothcombed strepsirrhines and the haplorhines, there was a divergence between the lemurs and the Afro-Asian lorisiforms[4,6,7]. The lorisiform lineage then divided into bushbabies and lorises (Fig. 2, overleaf), a subdivision that may also be documented by the new fossils. Molars of *Saharagalago* strikingly resemble those of modern bushbabies, whereas those of *Karanisia* are generally similar to loris molars, particularly those of the African angwantibo (*Arctocebus*). However, one of the most striking differences between modern bushbabies and lorises involves locomotor adaptations: lorises typically climb sluggishly (reflecting their very low basal metabolic rates), whereas

100 YEARS AGO

The investigation of the properties of radium salts has led to many remarkable results, among which those contributed by MM. P. Curie and A. Laborde to the current number of the *Comptes rendus* are not the least remarkable. They adduce evidence to show that radium salts give off heat continuously. … Two small bulbs, one containing 1 gram of a radiferous barium chloride containing about 1/6 of its weight of radium chloride and the other containing a similar weight of ordinary barium chloride, were placed under similar thermal conditions with a junction of a thermocouple in each bulb. The bulb containing the radium preparation proved to be 1°·5 hotter than the other, and this temperature difference was maintained. An independent confirmation was obtained with the Bunsen ice calorimeter. At the moment the radium bulb was introduced, the mercury, which was previously stationary, commenced to move along the tube with a perfectly uniform velocity, and on the bulb being taken out the mercury stopped. … the authors conclude that a gram of pure radium would give off a quantity of heat of the order of 100 calories per hour, or 22,500 per gram-atom per hour, a number comparable with the heat of combustion in oxygen of a gram-atom of hydrogen. The disengagement of such a quantity of heat cannot be explained by the assumption of any ordinary chemical transformation, and this excludes the theory of a continuous modification of the atom. The heat evolution can only be explained by supposing that the radium utilises an external energy of unknown nature.
From *Nature* 26 March 1903.

50 YEARS AGO

The Cecil Peace Prize of the Association of Universities of the British Commonwealth has been awarded for 1952 to K. H. Dawson, of the London School of Economics (at present at the Graduate School, Princeton University). The subject for the competition for 1953 is "Has the United Nations Organization been successful in carrying out the objects for which it was formed as defined in the Preamble and Chapter 1 of the Charter? Do you recommend any, and if so, what amendments in the terms of the Charter?" Essays must be sent before November 1 to the Secretary, Association of Universities of the British Commonwealth, 5 Gordon Square, London, W.C.1, from whom further details can be obtained.
From *Nature* 28 March 1953.